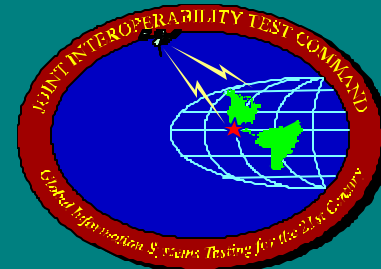




JITC



JOINT INTEROPERABILITY TEST COMMAND



Agenda

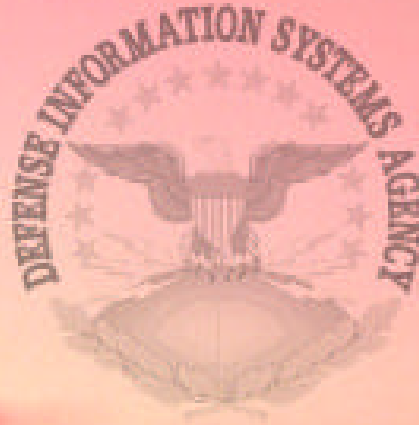
✓ Background

❑ Mission Areas

- Developmental Test & Evaluation
- Operational Test & Evaluation
- Joint Interoperability Certification
- Warfighter Support

❑ Mission Impact





JITC
reduces risk to the Warfighter
by ensuring compatibility, integration,
and interoperability throughout the
life-cycle of DoD systems.



DISA Organization Pyramid



JOINT STAFF



DOT&E

**DISA
DIRECTOR**

**DISA
PRINCIPAL STAFF
D1 - D5 - D8**

DISA FIELD OFFICES

- ★ DISA WESTHEM
- ★ DISA CINC FIELD OFFICES
- ★ JOINT INTEROP & ENGR ORG (JIEO)
- ★ WHITE HOUSE COMM AGENCY (WHCA)
- ★ **JOINT INTEROPERABILITY TEST COMMAND (JITC)**
- ★ DEFENSE INFO TECH CONTRACTING OFFICE (DITCO)



JITC's Locations

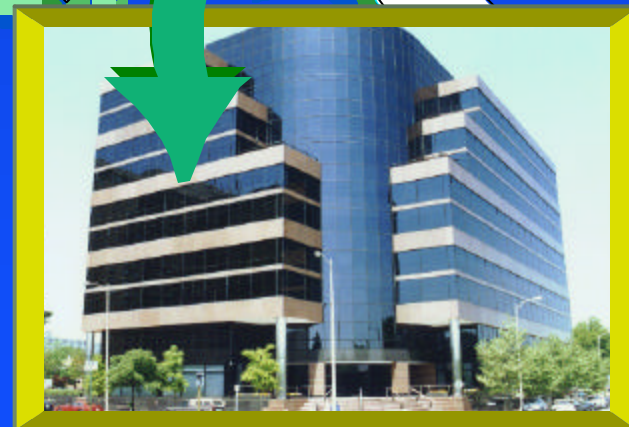
INDIAN HEAD

CIVILIAN	MILITARY	CONTRACTOR	TOTAL
32	37	54	123



VIRGINIA SQUARE

CIVILIAN	MILITARY	CONTRACTOR	TOTAL
9	4	11	24



FORT HUACHUCA

CIVILIAN	MILITARY	CONTRACTOR	TOTAL
113	46	478	637





JITC's Specific and Unique Roles

- ❑ Sole C4I interoperability certifier
- ❑ Operational Test Agency for many DoD elements
- ❑ Executive Agent for testing (NIMA, EKMS, and CDL)
- ❑ Major Range & Test Facility Base (MRTFB)





JITC's Areas of Expertise

- ❑ Automated interoperability support tools (Joint Interoperability Tool (JIT), interPRO, INTELpro)
- ❑ Ballistic Missile Defense (BMD) / National Missile Defense (NMD)
- ❑ Command and Control (C2)
- ❑ Defense Information System Network (DISN) Standardized Tactical Entry Point (STEP)
- ❑ DISN CONUS / OCONUS
- ❑ Defense Message System (DMS)
- ❑ Defense Red Switch Network (DRSN)
- ❑ Distributed Network Control Center (DNCC)
- ❑ Electronic Business / Electronic Commerce (EB / EC)
- ❑ Family of Unmanned Aerial Vehicle (UAV) systems
- ❑ Global Command and Control System (GCCS)
- ❑ High Frequency Test Facility (HFTF)
- ❑ Joint Tactical Data Link (JTDL)
- ❑ Joint Theater Air & Missile Defense (JTAMD)
- ❑ National Imagery Transmission Format Standard (NITFS)
- ❑ Network Integration Testbed / Asynchronous Transfer Mode (NIT / ATM)
- ❑ Security Management Infrastructure (PKI and EKMS)
- ❑ Strategic Switch Lab (SSL)
- ❑ Tactical Communications Testbed
- ❑ Ultra High Frequency (UHF) Demand Assigned Multiple Access (DAMA)
- ❑ Year 2000



JITC's Global Reach

DOD

AIR FORCE
ARMY
MARINES
NAVY



CINCs
DDR&E
RESERVE
NAT'L GRD

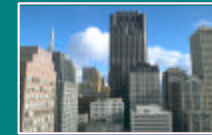
SERVICE OTAs & PMs
BMDO, DeCA, DFAS, DIA, DLA,
NIMA, NSA

DEFENSE REFORM INITIATIVES

ELECTRONIC BUSINESS /
ELECTRONIC COMMERCE
(EB / EC) TESTING
SUPPORT

DEBX, CCR, EDA,
WAWF, EMALL

INDUSTRY



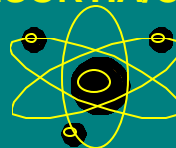
3COM, AT&T, ESI, FORE SYSTEMS, GE,
GENERAL SIGNAL TECHNOLOGIES, GTE,
KODAK, LOCKHEED,
LUCENT TECHNOLOGIES, NET,
NORTHERN TELECOM, NORTHROP,
PHOTOTELEESIS, RAYTHEON,
SIEMENS CORP, TIMEPLEX,
TITAN CORP, OTHER VENDORS

FEDERAL



DEPARTMENT OF ENERGY
DEPARTMENT OF JUSTICE
DEPARTMENT OF STATE
DEPARTMENT OF AGRICULTURE
FEDERAL BUREAU OF INVESTIGATION

CONSORTIA/CRADA



NATIONAL COMPUTING
CENTRE (UK)
U OF PENNSYLVANIA
TEKTRONIX
TELCORDIA

ALLIES



AUSTRALIA, SINGAPORE,
THAILAND, KOREA, JAPAN,
NATO, UNITED KINGDOM,
ICELAND, NORWAY,
PfP COUNTRIES



Agenda

- ❑ Background
- ❑ Mission Areas
 - ✓ Developmental Test & Evaluation
 - Operational Test & Evaluation
 - Joint Interoperability Certification
 - Warfighter Support
- ❑ Mission Impact





Developmental Test & Evaluation

❑ Developmental Test & Evaluation

- Support DISA-developed systems and non-DISA systems as requested
- Test to specifications
- Build a little, test a little
- Testers become familiar with system earlier in program
- Feeds Operational Test Readiness Review (OTRR) and interoperability certification

❑ Examples

- DISA systems: DMS, GCCS, EB / EC
- Defense Joint Accounting System (DJAS)
- Defense Standard Disbursing System (DSDS)

❑ Standards conformance

- Normally conducted during DT&E
- Foundation for joint interoperability testing
- Determines system compliance to appropriate JTA standards and requirements documents
- Successful standards conformance testing enhances probability of interoperability with other compliant systems

❑ Examples

- National Imagery Transmission Format Standard (NITFS)
- UHF SATCOM DAMA
- Message Text Format (MTF)



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Operational Test Agency

❑ DISA Programs

- Global Command and Control System
- Defense Message System
- Defense Information System Network

❑ DFAS Programs

- 15 Finance and Accounting Systems

❑ DLA Programs

- Environmental
- Fuels
- Defense Reutilization
- Procurement

❑ Other Programs

- Special Ops Force - Intelligence Vehicle (SOF-IV)
- Defense Commissary Agency

❑ Test Integration

- Coordinate all testing to preclude duplication





Operational Test & Evaluation GCCS

- ❑ Fast track, non-standard acquisition
- ❑ Codified system requirements
- ❑ Conducted two-phase OT&E
 - Supported milestone decisions
 - Shutdown legacy system
- ❑ Characterized system builds, providing feedback to developers and JS-J3 decision makers
- ❑ JITC conducting MDT and OT&E
 - Increased user involvement
 - “Operationalizing” testing to produce better final product





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Joint C4I Interoperability Directives

DoDD 4630.5

Forces must have compatible, interoperable, and integrated C3I systems.

DoDD 5105.19

DISA shall ensure end-to-end interoperability

CJCSI 6212.01A

JITC is the sole certifier of C4I systems for Compatibility, Interoperability, and Integration throughout the life-cycle.

CJCSI 3170.01A

Establishes policies and procedures for requirements generation (MNSs, CRDs, ORDs). Mandates interoperability KPP for CRDs and ORDs.

DoDI 4630.8

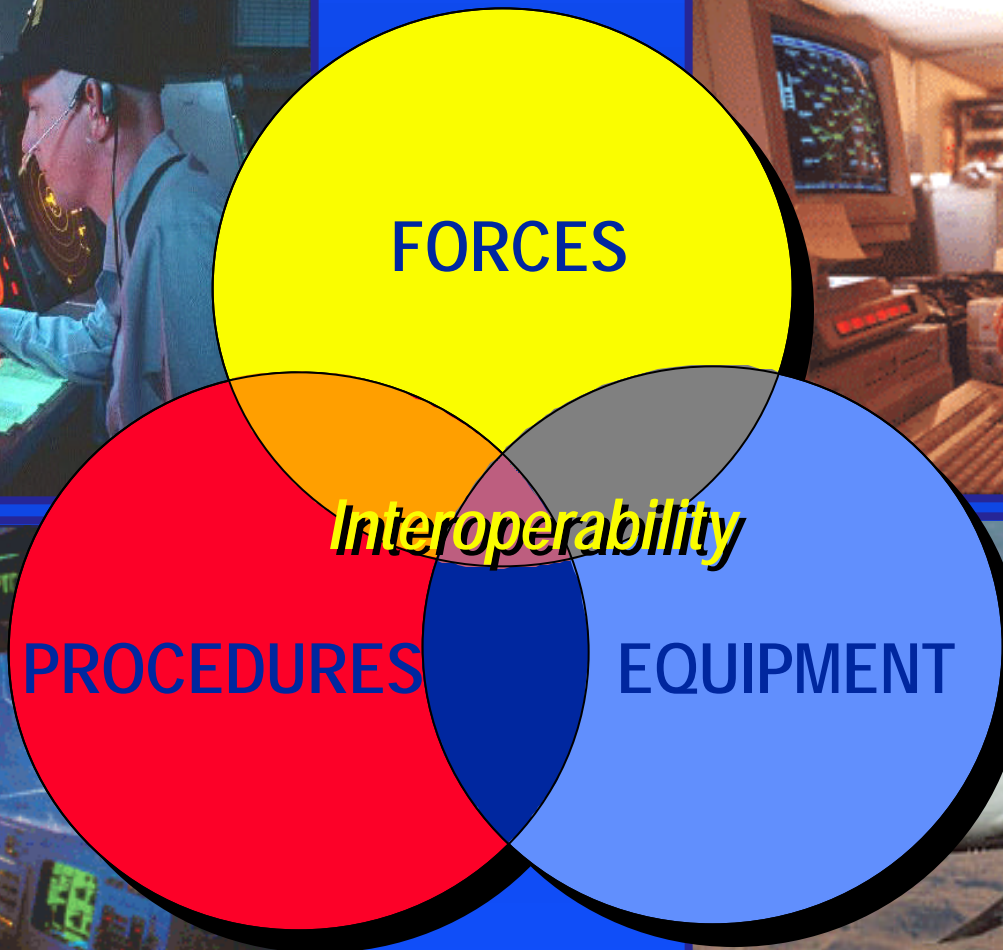
All C3I systems are for joint use and shall be certified by DISA in the acquisition process.

DoD Regulation 5000.2-R

JITC shall certify that C4I systems and equipment meet applicable requirements for Compatibility, Interoperability, and Integration.

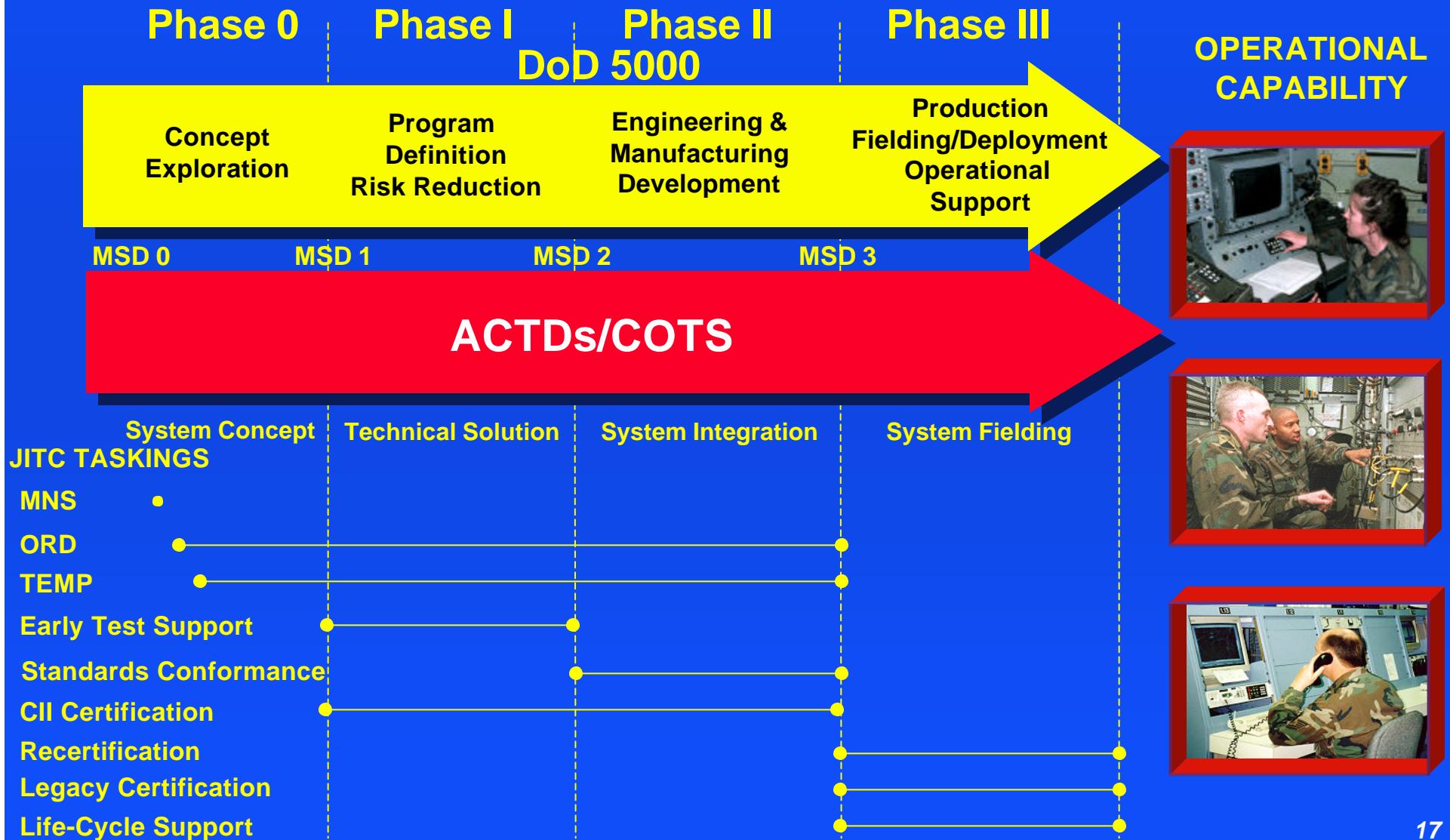


JITC's Interoperability Perspective





Acquisition Process





Joint Interoperability Certification Process

Requirements Certification

**Joint Staff,
C/S/As, DISA/JITC**

- ☐ Definition Phase
- ☐ Documentation Phase
- ☐ Validation Phase
- ☐ Approval Phase

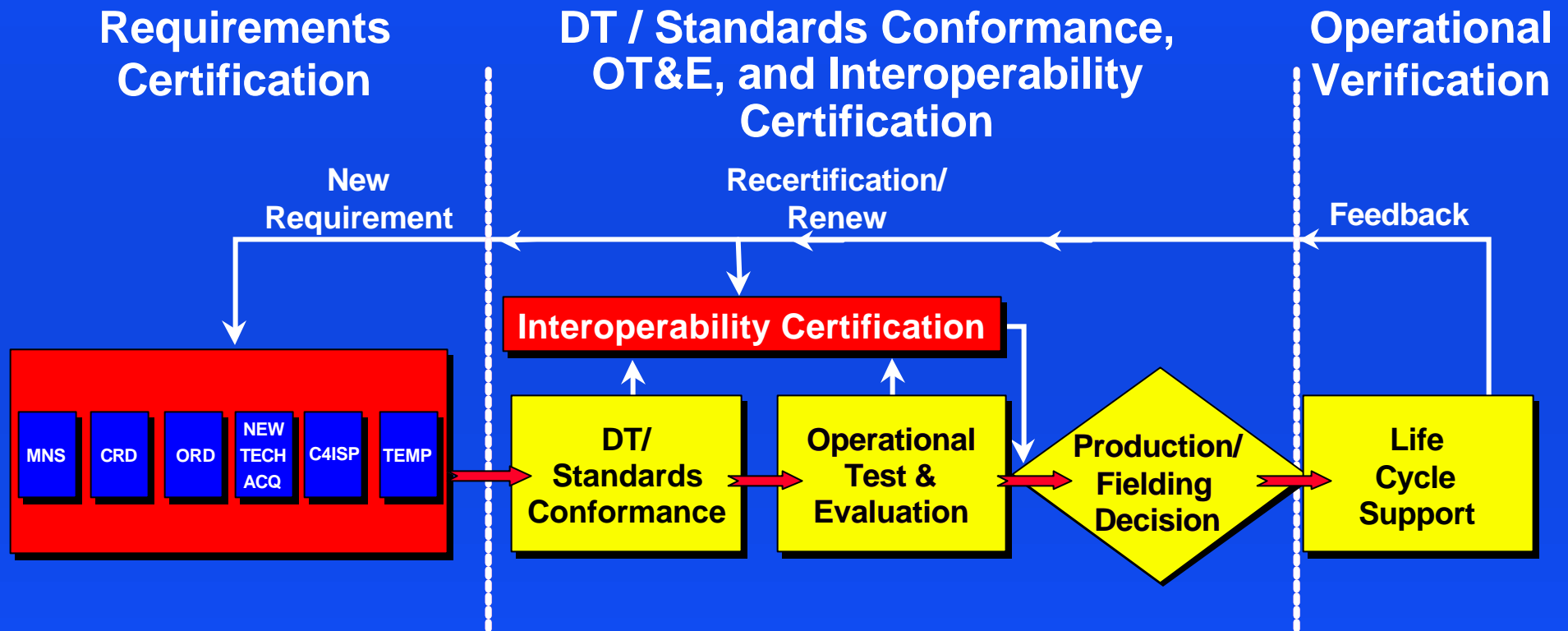
Joint Interoperability Certification

DISA/JITC/Services

- ☐ Standards Conformance Certification
- ☐ Interoperability Certification
- ☐ Life-Cycle Support



System Life-Cycle Certification Process



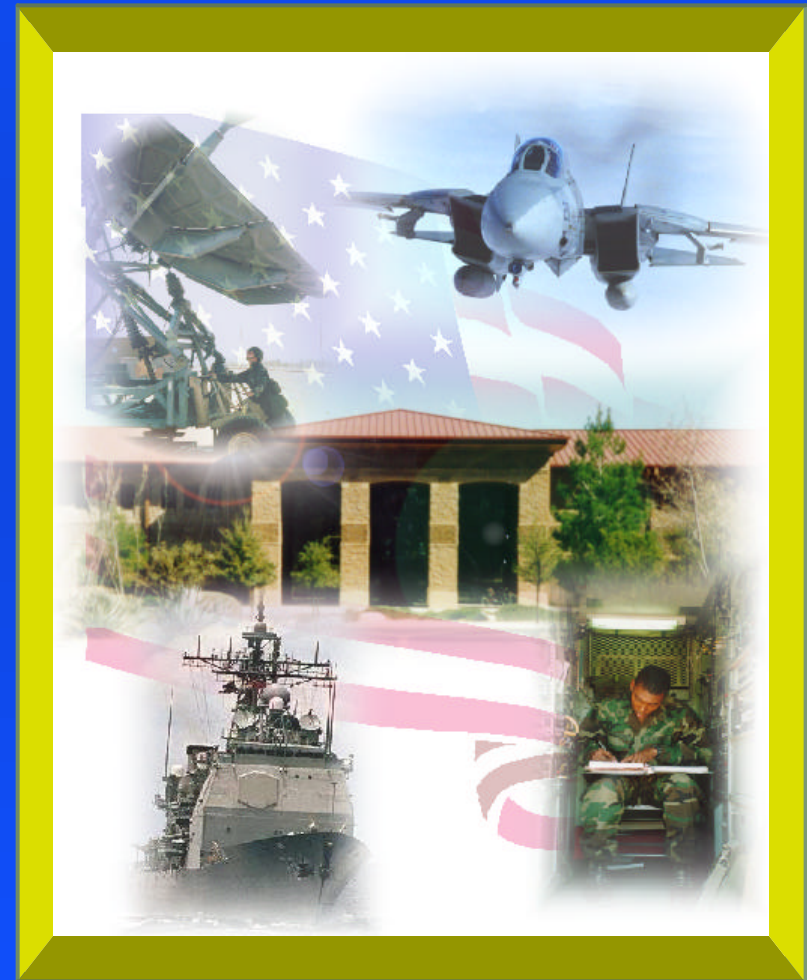
“Interoperability must be a life-cycle commitment.”

Lieutenant General John L. Woodward, Jr., Director, Command, Control, Communications and Computer Systems Directorate (J-6), Joint Staff



JITC Testing

- ❑ **Criteria for measuring success**
 - MNSs, ORDs, TEMP, C4ISPs
 - Characterize and certify
 - Ensure operational capability
 - Test for success
- ❑ **Major challenges**
 - Fast track acquisition process
 - Service vs. Joint acquisition
 - Distributed operational environment
 - Affordable confidence
- ❑ **JITC's follow-on program**
 - Validate and verify certifications
 - Capture systems that escaped acquisition cycle
 - Train C4I equipment users





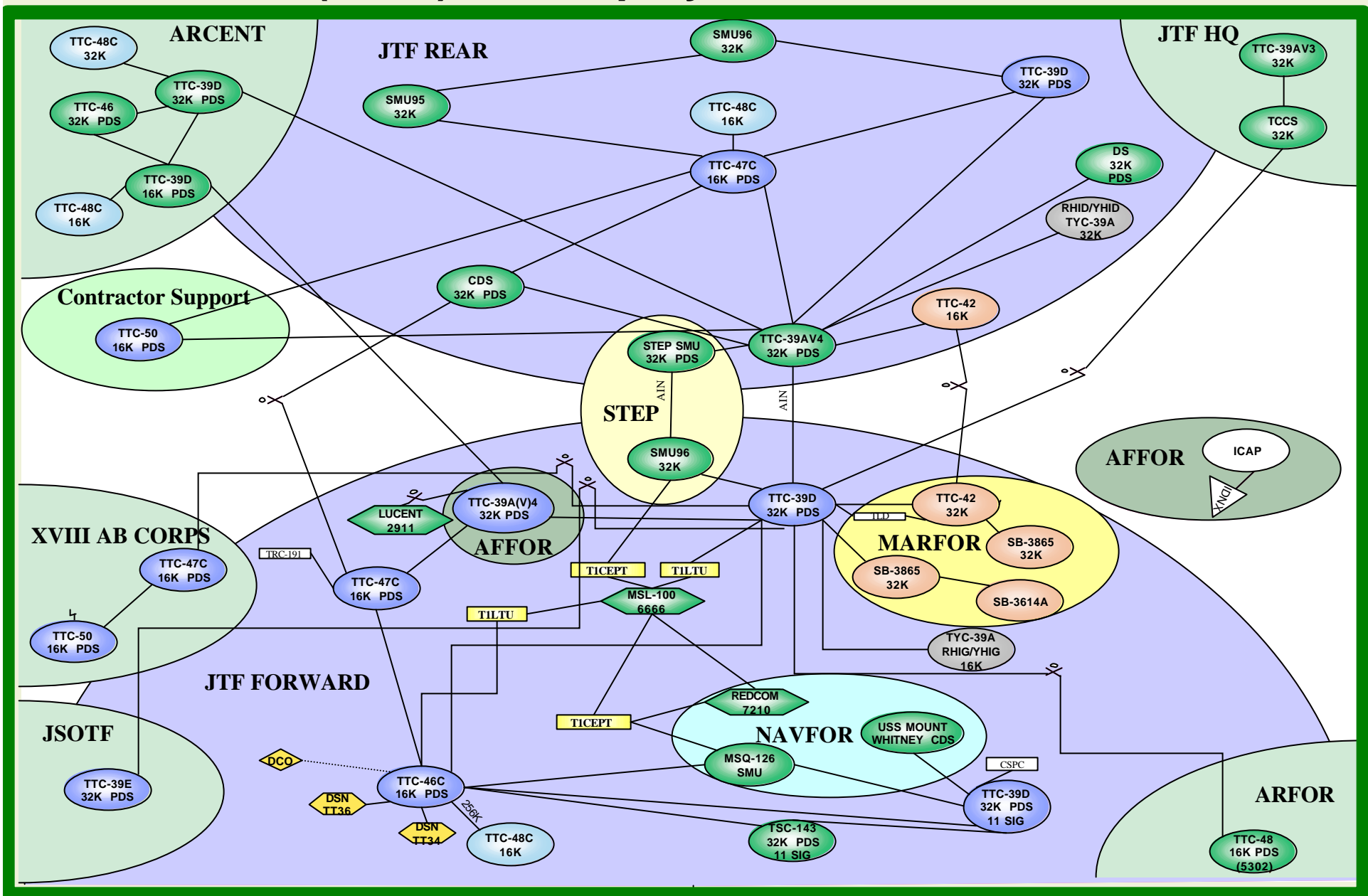
DoD Interoperability Communications Exercise (DICE)

- ❑ Emulated a JTF network architecture
- ❑ Consolidated resources to test systems and software with actual user
 - Assessed interoperability and integration of software and systems
 - Over 40 systems participated
 - Certified 16 systems
 - Tested 295 interfaces in 10 geographically separated sites
 - Conducted Y2K assessments on 24 systems
- ❑ Payoff: Reduced risk to the Warfighter



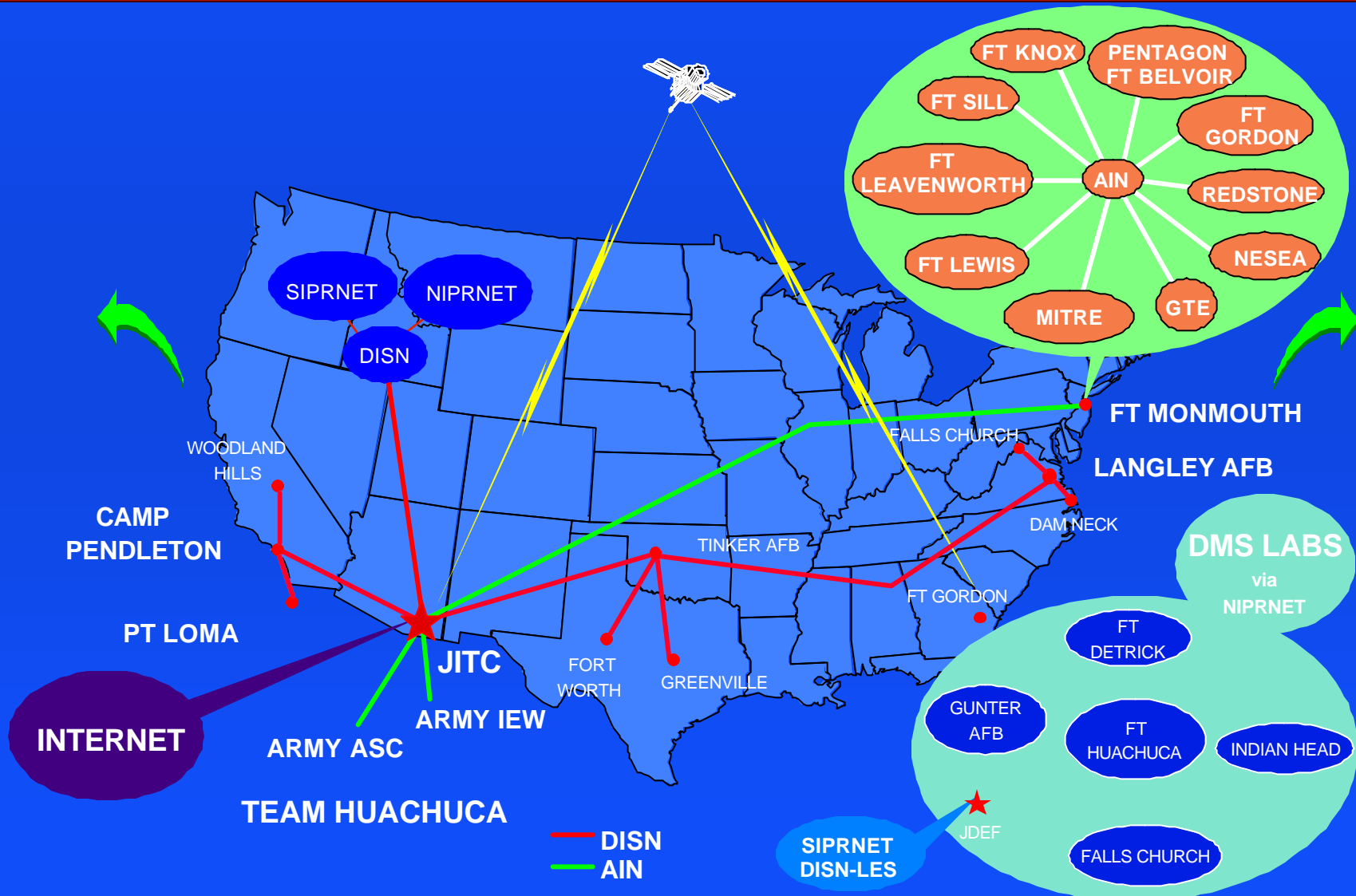


DoD Interoperability Communications Exercise (DICE) JTF Deployed Architecture



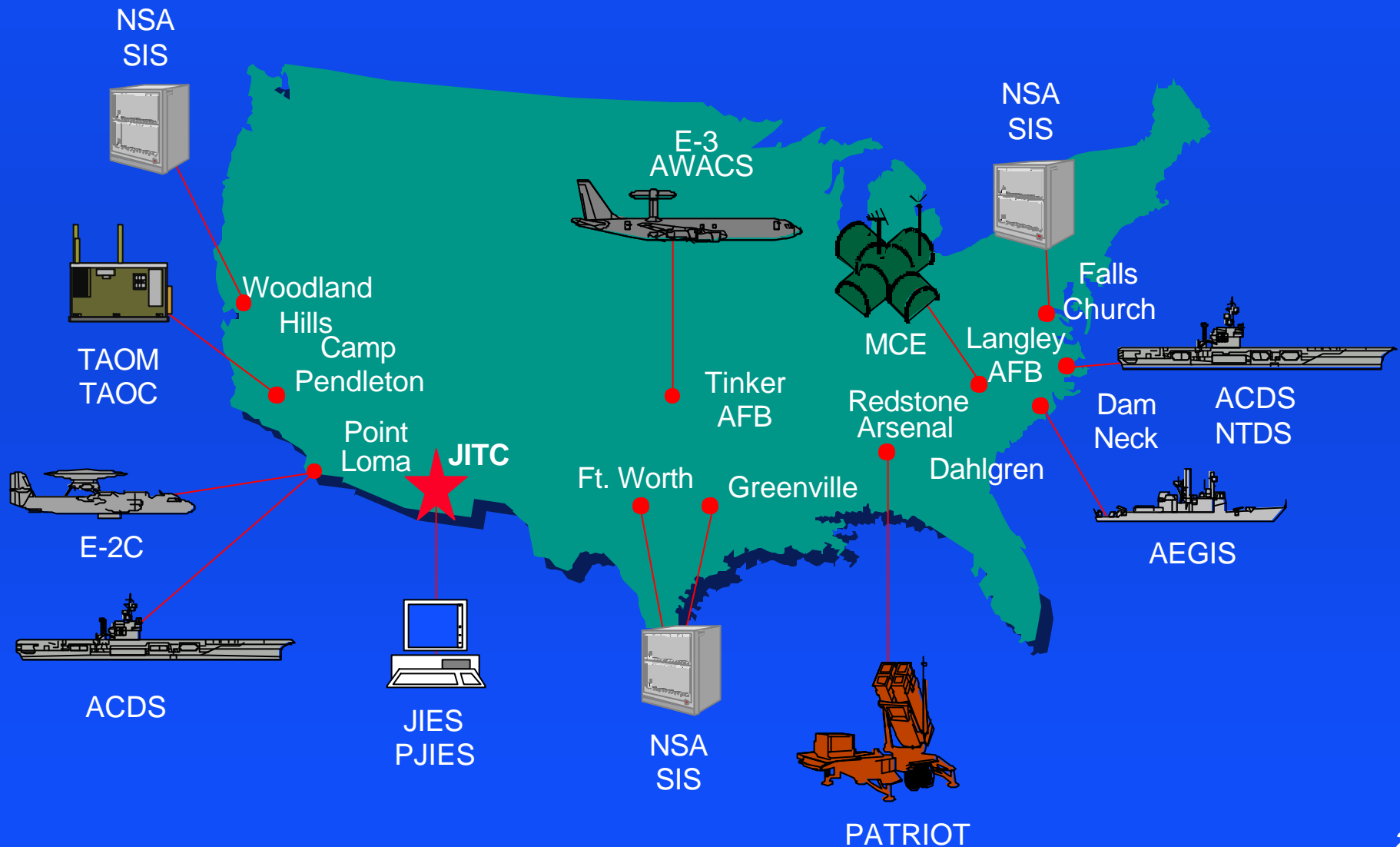


Command and Control





Command and Control Theater Air Defense





Agenda

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C4I Assistance to the Warfighter

❑ C4I systems and networks

- Real world contingencies
- Exercise support
- Field assessments
- On-site technical assistance
- Lessons Learned





C4I Assistance to the Warfighter Contingency and Exercise Support





C4I Assistance to the Warfighter Tandem Thrust 99

- ❑ **Preempted interoperability problems during planning phase**
 - Tactical ship-to-shore (GMF)
 - Incompatible sec-voice instruments
 - Switch operations and capabilities
- ❑ **Provided on-site support**
 - Deployed 4-person team
 - Switch operations
 - Transmission systems
 - Data network performance monitoring
- ❑ **Identified uncertified joint interfaces**
 - AUTODIN message distribution
 - Ship-borne commercial switches
- ❑ **Validated CJCSM 6231 guidance**
- ❑ **Documented issues and provided feedback to supported CINC**
 - Architecture revisions
 - Exercise support report
 - Lessons Learned





C4I Assistance to the Warfighter Combined Endeavor 99

Camp Aulenbach, Germany, 6-20 May
Personnel and equipment from 31 Nations

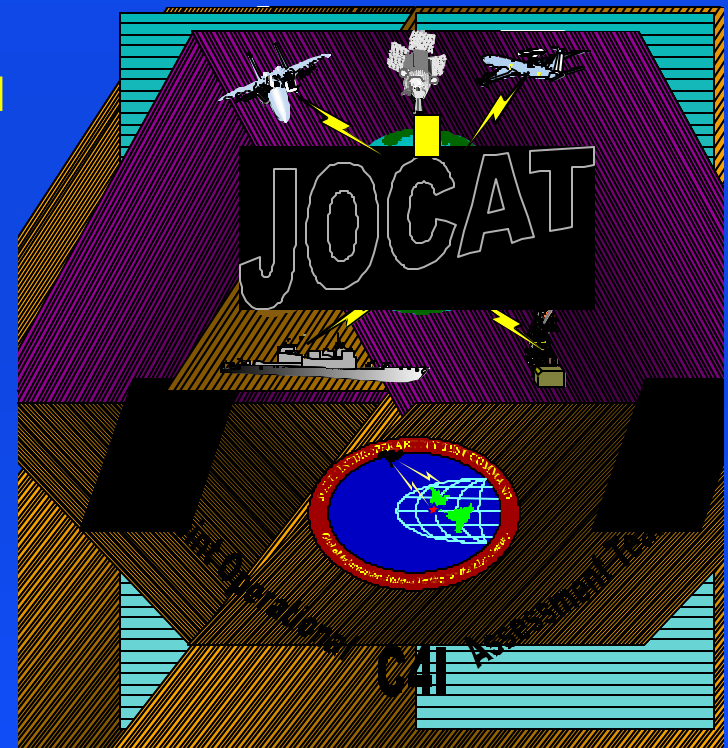
- ❑ Deployed 19-member team
- ❑ Provided technical support for the test plan
- ❑ Conducted network, switch, HF, and radio tests
- ❑ Conducted combined interoperability testing
 - 28 switches
 - 17 radio relay systems
- ❑ All tests documented in the NATO / PfP Interoperability Guide
- ❑ Guide used by USEUCOM to plan Bosnia and Kosovo operations





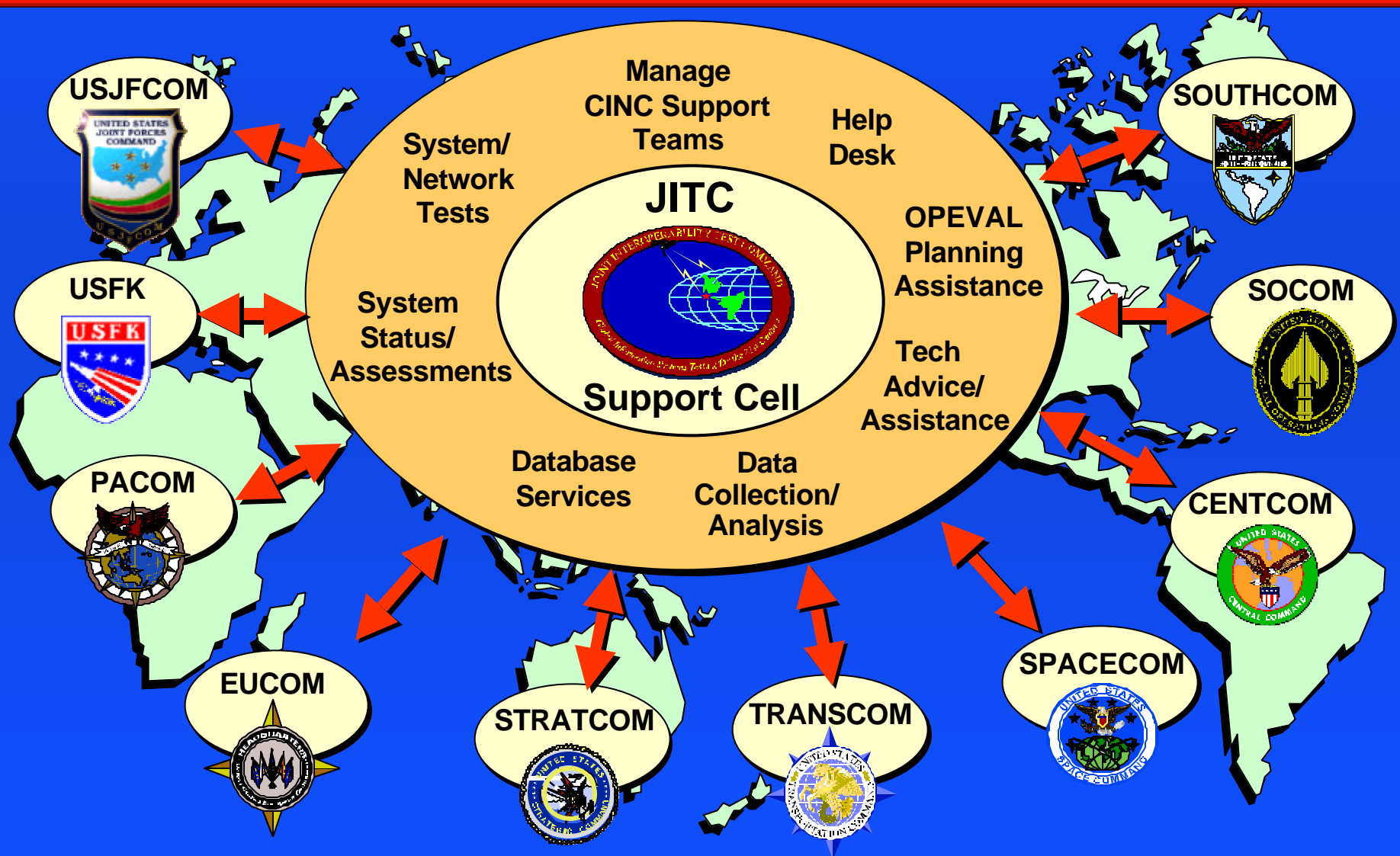
C4I Assistance to the Warfighter Foal Eagle 98

- ❑ Assisted in plan for integration of TADIL-J to theater
- ❑ Provided JOCAT for the Joint Interface Control Officer (JICO) to execute and manage the Multi-TADIL networks
- ❑ Determined ability of Joint Theater Air and Missile Defense (JTAMD) Family of Systems to provide a Single Integrated Air Picture (SIAP) via the Joint Data Network
- ❑ Documented
 - JICO lessons learned
 - TADIL architectures
 - Theater JTAMD early warning architecture





CINC Y2K Operational Evaluations





Additional CINC/Services Support

REAL-TIME HOTLINE SUPPORT

- ❑ 24 hours per day, 7 days per week
- ❑ Rapid response to warfighter C4I interoperability problems
 - Exercises
 - Contingency deployment
 - Operations
- ❑ Continuous warfighter use:
 - FY95 - 187 calls
 - FY96 - 285 calls
 - FY97 - 258 calls
 - FY98 - 215 calls/5,724 JIT hits
 - FY99 - 149 calls/6,955 JIT hits



LESSONS LEARNED REPORT

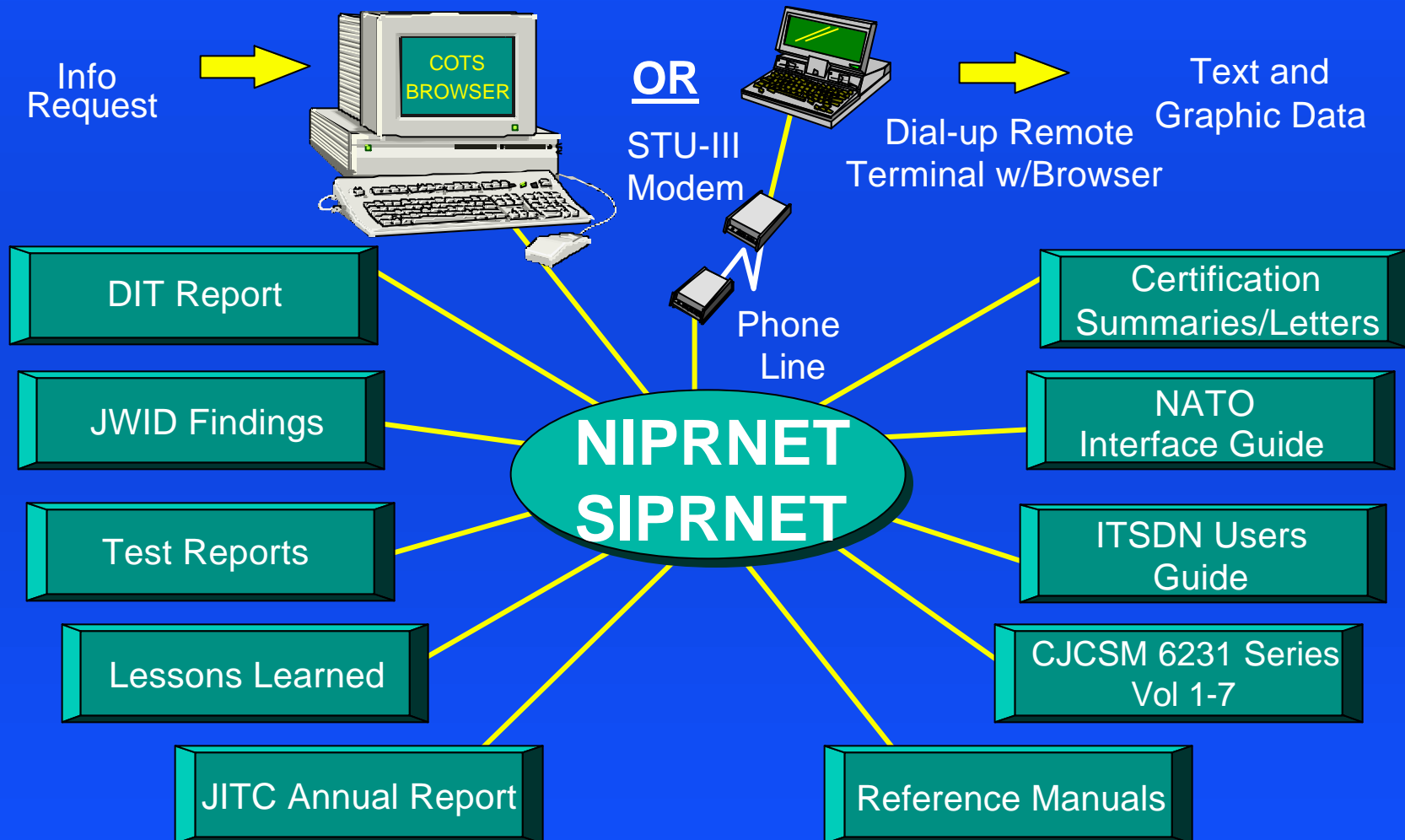
- ❑ Provides timely solutions to C4I interoperability problems
- ❑ Published quarterly for the last 10 years
- ❑ 1014 subscribers
- ❑ Available on the JITC's Joint Interoperability Tool (JIT) website

Hotline E-mail: hotline@fhu.disa.mil Phone: 1-800-LET-JITC

Lessons Learned Report: NIPRNET <http://jit.fhu.disa.mil>



Joint Interoperability Tool (JIT)



JIT: NIPRNET <http://jit.fhu.disa.mil>



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- ✓ Mission Impact





National Imagery Transmission Format Standard (NITFS)

❑ Problem

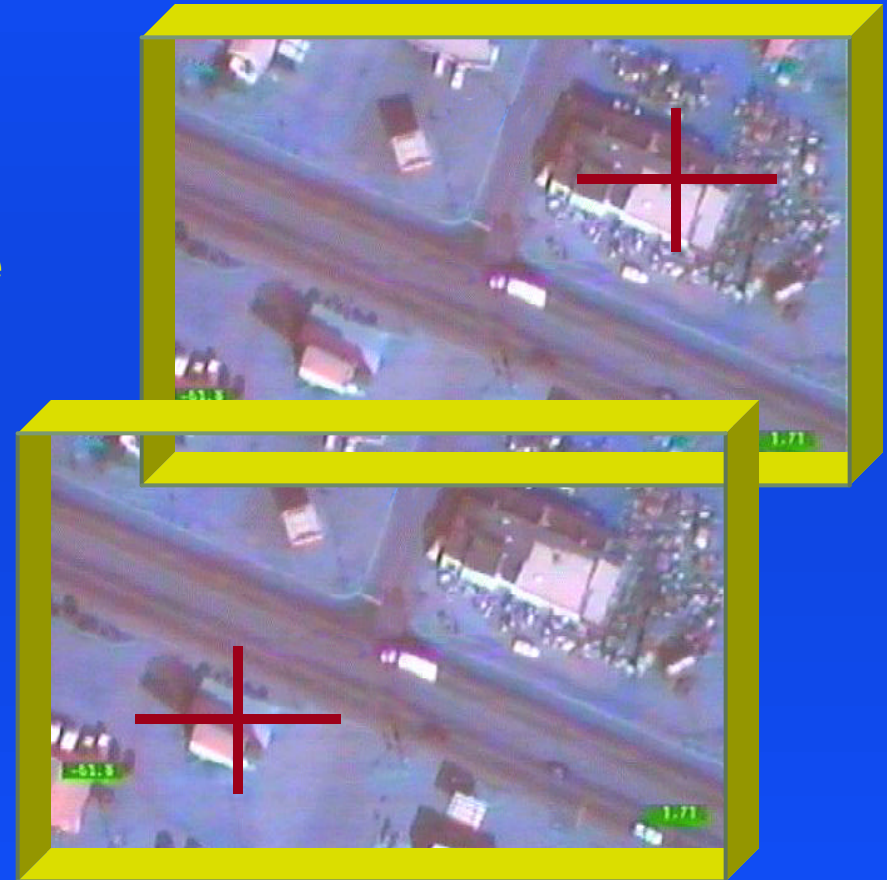
- NITFS not implemented correctly in all products
- Different viewers will view the same file differently - same image but different target

❑ Solution

- Developed and implemented imagery standards validation and conformance test program

❑ Successes

- Imagery systems interoperable
- International standards



USERS:

Military, Intelligence, Agriculture, Medical, Law Enforcement



Defense Red Switch Network (DRSN)

❑ Problem

- No operational test network
- Catastrophic failures
- Loss of service

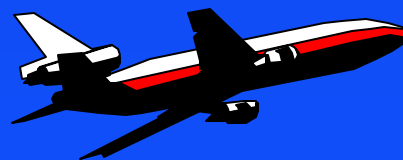
❑ Solution

- Developed operational test environment
- Replicated field problems to develop solutions
- Trained Service technicians

❑ Successes

- Eliminated network failures
- System is now reliable

CENTCOM
CINC AIRCRAFT





Theater Missile Defense (TMD) Interoperability

❑ Problems

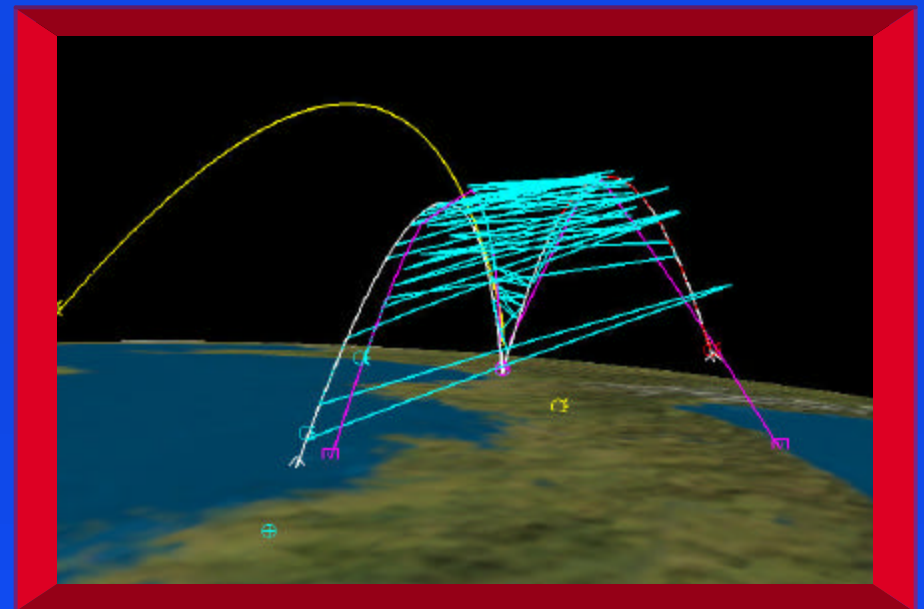
- Multiple tracks on same flying object
- Same track number used on multiple objects
- Inaccurate reporting of threat position
- Reporting responsibility / track correlations continue to be immature

❑ Solution

- Recommended proper implementation of MIL-STD-6016A to minimize problems

❑ Success

- First quantitative assessment of TMD FoS interoperability



JITC Provides
Unparalleled WARFIGHTER Support
The BATTLE GROUND
should not be the TESTING GROUND



